Menlo Park Notebook #120 [N-80-11-25]

The dated entries in this notebook cover the period November-December 1880, but the book was probably begun earlier in the year. All of the entries are by William J. Hammer. Most of the material relates to the gathering of statistics for the Pearl Street district. Included are statistics that were copied from block survey books of the district and from answers to questions asked by the surveyors. There are also tables of tests relating to the second lot of one hundred lamps sent from the lamp factory to the laboratory for testing, a table of the first lot, notes and drawings of lamp experiments, and a drawing of a Brush arc light. The label on the front cover is marked "Electric Lamps Statistics &c &c Figuring," and "Wm. J. Hammer." The book contains 284 numbered pages and has been used in both directions.

Blank pages not filmed: 1-2, 9, 50-53, 90-91, 112-117, 120-123, 128-237, 240-245, 248-255, 270-271, 274-277, 282-283.

Missing page numbers: 3-8, 11-12, 21-22, 261-266.

The next three pages contained figures from which the annexed Table was compiled

Hammer

Second Lot of 100 Test Lamps.

Number of Lamp	Volts before Test.	Volts after Test	Ohms before Test	Ohms after Test.	Ft-Lbs before Test.	Ft-Lbs after Test.
13 ✓	144	161	158	196	5813	5850
18 ✓	144	158	169	197	5438	5470
22 ✓	136	147	138	140	5937	8450
29 ✓	136	147	169	183	4850	5160
36 ✓	153	155	178	158	5820	6730
37 ✓	140	147	169	164	5120	5840
40 ✓	135	143	157	159	5140	5630
42 ✓	131	150	151	164	5020	6070
43 ✓	137	142	164	159	5060	5820
46 ✓	136	144	157	broken	5230	broken
51 ✓	137	133	154	147	5400	5300
53 ✓	133	135	158	148	4960	5450
57 ✓	141	143	179	164	4920	5800
67 ✓	127	137	137	127	5220	6060
69 ✓	130	131	140	139	5350	5460
70 ✓	136	~	157	~	5220	~
83 ✓	130	156	158	172	4850	6260
84 ✓	129	135	157	161	4700	4580
98 ✓	127	139	140	137	5100	6240

4
26
50
72
97
2
17
38
83
0
19
52
80
19
57
79
98
12
52
87
9
79
3
67
40
25
20
20
4
1251

4700
1251
20 / 5951
297 squares.
Average
per verification.

Belonging to Lot-1

List of 32 Lamps of Lot-1 which burnt

their Res. ~

No	Min	No	Min
26 ~	30	74 ~	269
32 ~	40	77 ~	281
24 ~	44	42 ~	284
69 ~	48	59 ~	295
4 ~	56	46 ~	309
37 ~	57	19 ~	314
3 ~	69	65 ~	355
14 ~	70	51 ~	374
6 ~	82	22 ~	376
10 ~	87	50 ~	443
12 ~	94	81 ~	440
72 ~	111	32	3740 6197
33 ~	123		
76 ~	142		
56 ~	153		
67 ~	155		
79 ~	187		
30 ~	215		
62 ~	220		
78 ~	235		
57 ~	239		
	2457		

Average time of burning [illegible] min,
198

~~32/[illegible]/[illegible]~~
~~[illegible]~~
~~min~~
~~289~~
~~288~~
~~1~~

$$32\,\big|\,6197\,\big|\,\underline{198}$$
32
299
288
117
96

198 min average

Lot-1

~~S~~Lamps lasting ~~[illegible]~~ minutes.

No	
40	1350
47	1050
1	745
17	703
90	790
91	701
9	103
7	5442

82

89 Total

22159
5442 minutes

89 | 27601 | ~~310~~ ~~Average~~
267

90
89
11
89

308 min
Average

No.	Min.	No	Min.				
49	6	59	130	12	260	75	579
4	16	56	131	73	277	41	594
77	20	58	133	39	281	6	608
87	30	65	133	33	293	62	630
93	34	61	135	82	295	55	673
52	41	86	138	8	325	15	740
10	45	26	138	72	340	90	783
47	49	27	138	28	361		
24	53	79	144	1	368		
48	56	66	153	19	368		
78	65	54	162	64	368		
60	68	38	169	23	373		
11	70	17	171	91	375		
85	73	94	175	25	378		
81	78	45	176	2	392		
47	80	68	176	88	403		
14	90	44	180	89	438		
92	98	96	181	50	448		
9	108	1	190	80	473		
3	113	21	203	5	496		
31	119	32	203	16	523		
95	120	76	203	20	527		
7	121	35	214	63	530		
74	123	71	238				
		34	243				

over on next page,

8 - 241
11 - 812
15 - 1922
10 - 1734
6 - 1304
5 - 1406
2 - 665
7 - 2615
3 - 1289
2 - 969
3 - 1580
2 - 1166
2 - 1238
1 - 673
1 - 740
1 - 783

79 19137

1 - 808
1 - 808
1 - 813
1 - 816
1 - 816
1 - 821
1 - 828
1 - 845 4

6550

1 - 903
1 - 912
1 - 919
1 - 925
1 - 940
1 - 970
1 - 1130
1 - 1182
1 - 1220
1 - 1315
1 - 1355

98 - 11771
6550
Lamps: 19137

9 98 / 37458
382

Book
4

N.Y. Gas Light Co. 102 consumers.
Mutual " " 17 "
Marked City Gas 8 "
Kerosene 33 "
Candles 9

Do not use any light 9 parties.

No of Jets without globes = 1036
" " " with clear " = 134
" " " " ground " = 279
" " " " Tin Shades = 32

Did you ever notice any perceptible leakage — Yes = 76 No = 0 Dont know 1

Are you bothered with the heat
Yes = 42
No = 77

over

Continuation of Book 4

Do you lts jump { Yes 128
No 2

Do you use gas for heating.
{ Yes. 30
No.. 96

used for following purposes
glass blowing = 3 parties.
heating glue = 10 "
Soldering = 7 "
Embossing = 2 "
laboratory use = 1 "
heating irons = 1 "
Varnishing = 1 "
Showroom = 1 "
heating = 3 "

Style of flames.

4	5	6
32	98	1

Continuation of Books 4

2 Reflectors = 4 jets each.
2 " = 5 " "
6 " = 6 " "
2 Chandeliers 4 " "
6 segar lighters.

Are there times when you have to regulate the jet to keep it right when it is varied by difference in pressure.

Yes. 126
No - 3

Do you like the gas sold you

Ye. 51.
No 74.

Is it found that the 50 Grains of Sulphur thrown into the atmosphere at your place damages your paint or good. Yes 0 No 125

Continuation of Book 4.

Did you ever take gas from any other Co.? if so which, & how does it compare with this.

Yes = 12
No = 122

Remarks. 3 = Use Mutual like N.Y. best
2 = " N.Y. " Mutual "
" " " N.Y. best
2 = " both Co's gas,
2 "
2 " Can see no diff.
1 Had Mutual smelled too much to use.

Do you use an Engine? - if so Whose?

1	Hewes and Phillips	80	Horse Power
1	Buckeye Engine	30	" "
1	Allen Cut-off	50	" "
1	Roper Caloric	2	" "
1	Hubbard & Allen	6	" "
2	Otis Bros,	10	" "
		10	" "
6	Baxter Engine	8	" "
	" "	10	" "
	" "	4	" "
	" "	4	" "
	" "	4	" "
	" "	10	" "

Continued on next page,

{Erie Engine — 40 H.P.

1 {Snedicor " — 10 H.P.

1 {Hittenger Cook & Co — 40 H.P.

Dont know maker's name

2 {1 — 8 × 8
1 — 8 × 7

Also 2 Duplex air pumps

Is your Boiler Horizontal or upright—?

Horizontal
9

Upright—
2

Do you rent power if so how much do you pay for the whole or per H.P.

$150 year	45.00 month	4.00 week	$ 181.50
500 "	5.00 "	3.00 "	Total per month
150 "	12.50 "	6.00 "	

7 have it included in their rent.

3 Gave no definate amount

How much Horse Power do they charge you for

Total Amt. 108 H.P

Did not know. 4 parties.

Would not tell. 1

Note- fewer parties answered this question than the next.

How much do you think you use?

Total 236 Horse Power.

2 parties use all they can get.

2 Dont know.

Note, almost all the subscribers think they get or use less than is charged them but he collected many more answers to this question, hence seeming discrepancy in Amounts.

What proportion of the time do you use it:

All the time	28
2/3 of time	2
1/2 " "	2
3/4 " "	1
Nearly all the time	1

How much coal do you use per day week or month.

Total 63½ Tons per week.

1½ Chaldrons of coke.

Note, it will be remembered many hire their power.

Have you any machinery driven by foot power.

~~Yes~~ 33 parties (No 95

Employed as follows.

1. spinning wheel	1 - 4 presses
1 - (2) blowers for bellows	1 - 1 "
1 - cutter.	1 - copper cutter
1 - 30 lathes.	1 - press
1 - 4 machines	1 - 2 lathes
1 - 2 "	1 - spindles.
1 - 4 stove pipe machines	1 - 6 machines.
1 - 5 lathes.	1 - 7 lathes.
1 - 7 "	1 - 6 lathes.
1 - 2 presses	1 - 1 press
	1 - 4 presses

(over)

This is On next Page

Have you any machinery driven by foot power?

Yes

1. for spinning wheel.
1. " Bellows for flowers.
1. " Cutter
1. " "
1. " 30 Lathes.
1 " 4 machines
1. " 2 "
1. " 4 stove pipe machines
1. " stamp machine
1. 5 lathes
1. 1 "
1. 2 "
1 - 4 presses
1 - 1 "
1 - 1 "
1 - 1 copper cutter
1 - presses
1 - 2 lathes.
1.
1. Spindle
1. 6 machines
1 - 2 lathes

No

-
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸
-𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
95 No

1 - 6 lathe.
1 - 1 press
1 - 4 "
1 - sewing machines.
1 - 6 lathes.
1 - Embossing machine.
1 - 4 lathes.
1 - 2 lathes.
1 ~~for~~ Bellows
1 - sewing machines.
1 - lathe

33 parties yes.

How far do your vaults extend toward the curb or edge of sidewalk.

Even with the curb	Within 6 ft	8 ft		Within 9 ft
𝍸 𝍸 𝍸 𝍸	|	|		|
𝍸 𝍸 𝍸 𝍸				
𝍸 𝍸 ||	|	|		|
52				

Have you good ventilation or are your rooms oppressive in summer. +

Yes	Fair	No
𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸	||||
𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 |	4
𝍸 𝍸 𝍸 𝍸 𝍸		
𝍸 𝍸 𝍸 |||	31	
88		

What is your insurance rate.

1/2 per $	2 per $	3/4 per $	2 1/2 per	1 per $	2 per $	2 1/4	35 per $	[illegible]
𝍸.IIII 9 +	𝍸 5	𝍸.IIII 9	II 2	𝍸.𝍸 𝍸.𝍸. 𝍸.II 27 1 1/4 IIII 4	𝍸 5	𝍸.𝍸 10	𝍸 II 7.	[illegible]

40 per $	45	50	60 per $	65	70 per $	75	90 per $	80
𝍸.𝍸.𝍸 III 18	𝍸 𝍸 I 11	𝍸 I 6	𝍸.II 7	I 1	II 2	III 3	I 1 Dont-know 𝍸.I 6	II 2

What time Do you close in

Winter. and	Summer.
4 — III — 3	4 — III — 3
4.30 5 — III — 3	4.30 — I — 1
5.30 — 𝍸.𝍸.𝍸.IIII — 19	5 — III — 3
6.00 — 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸 IIII — 109	5.30 — 𝍸.𝍸.𝍸.IIII — 20
7 — 𝍸.III 8	6 — 𝍸.𝍸.𝍸.𝍸.𝍸 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸
8 — IIII — 4	7 — 𝍸.II 7
10 — 𝍸.I — 6	8 — III 3
	10 — 𝍸.I 6
	𝍸 𝍸.𝍸. 𝍸.𝍸.𝍸, 𝍸.𝍸 IIII 109

Have you a Hoistway

Yes	Elevators.
𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸, 𝍸. |||	2 steam. 1 " 1 " 1 " 1 " 1 " 1 " 7 " seven elevators
38	17

Book 5
Commencing at 146 + 148 William St
to Fulton to Gold to Ann St.

From South West cor Beekman
and William. to Nassau, to Ann
down to 57 + 59 Ann.

Book No 2

What Co. supplies you with gas.

Mutual 卌. 卌. 10 Mutual	N. York 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌 卌. 卌. 卌. 卌. 卌. [illegible] || 162 N. Y.
Kerosene 卌卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. ||| 48 Kerosene	Candles 卌. 卌. || 12 Candle
Do not use any light 卌. 卌. 卌. ||| 18 none	Decline to give inf. 1. 1

/

Edison's Electric Light

Continuation of Book 2

What is the actual no of burners. from 8 am, to 5 P.M. in Summer.

1/2 light	𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸 70	use only on cloudy days 1

What is the no burnt from 8 am, to 5 P.M in Winter.

1/2 light	𝍸.𝍸.𝍸.𝍸.𝍸 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸. 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸 ||| 88	use only on cloudy days 1

From 5 to 6 P.M in Summer	From 5 to 6 P.M in Winter.
𝍸.𝍸.𝍸:𝍸.|||.𝍸.𝍸.𝍸:𝍸. 𝍸;𝍸.𝍸;𝍸.𝍸.𝍸.𝍸.𝍸 | 86	𝍸.𝍸.𝍸.𝍸.𝍸.𝍸 𝍸.𝍸.𝍸.𝍸. 20 – 8, 12, 6; 12 – 9 – 6 5 – 7 – 4 – 12 – 24; 25 – 21 – 39 – 23 6 – 24 – 13 – 30 – 14 – 10 – 18 – 22 18 – 17 – 7 – 22 – 7 – 11 – 8 – 15 8 – 35 – 30 – 32 – 13 – 35 – 39

70
63
98
135
135
226
717

8
12
6
12
9
6
53

5
7
4
12
24
25
21
98

39
23
6
24
13
30
135

16
18
22
18
24
21
135

11
23
43
62
48
39
226

51
132
23
133
106
33
60
33
30
42
114
41
31
88
45
21
39
1044
6

64
27
16
25
44
33
41
263
3

Continuation of Book 2.

From midnight to 8 A.M.

卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. III

53.

How many gas jets have you without globes.
卌. 卌. 卌. 卌. 卌. 卌 卌. 卌. 卌. 卌. 1 - 51
61. 66. 19. 6. 43, 110 - 76 - 30 - 9 - 24, 24. 36. 6. 27
22. 8. 21. 21. 70. 44. 21. 6. 14. 20, 11. 68. 20. 21. 24.
4. 17. 26. 13. - 1044

How many have clear glass globes
卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. III

51

How many have you with ground glass globes.
卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. 卌. I
76 = 卌. 卌: 卌. 卌: 卌. 卌: 卌. 卌. 18. 26.
64. 12. 12, 13. 16. 9. 4. 12. 6. 18. 9. 11. 21. 7. 5.

263

Tin Shades 3
III

Do you use gas for Heating

Yes	no
𝍸 𝍸, 𝍸, |||	𝍸, 𝍸, 𝍸, 𝍸, 𝍸 𝍸, 𝍸 𝍸, 𝍸, 𝍸, 𝍸 𝍸, 𝍸, 𝍸, 𝍸
18	75

How many ½ lights? If any groups of small jets are used how many? &c

	Segar Lighter
||||	𝍸, 𝍸, 𝍸
4	15

Do you use an engine If so
Whose make is it.

Wilson & Roacke. Do not know the name ~~of maker~~
Neal
Sedgewood & Co
Borden
Todd and Rafferty
Baxter Caloric.
Erie City

Hydraulic Hand presses.

How much coal do you use per day week or month for power.

1 Ton per week   1 Ton per month
1 " " "   10 " " "
  1½ " " "
  7 " " "

1 Ton per day

12
30
10
1
7½
1½ Total
61½ Tons per month.

Do you have a specially employed engineer or does he other work, if so what proportion on the engine

1. No Janitor tends the engine.
1 makes himself generally useful.

Yes
𝍸.1 = 6

Do you rent power If so how much do you pay per year for the whole or per H.P.

How many horse power do they charge you for.

1 Horse Power.
1 " "
4 " "
10 " "
20 " "
3 " "
39 H.P. Total.

How much do think you use

11 Horse Power.   Dont know.
3 " "
15 " "   Use a horse for hoisting.
29   ///

Do you use that power all the time if notwhat proportion.

Yes   1/2 the time.
11
2 yes

Have you any machinery driven ~~machinery~~ by foot power.

1 sewing machines.	1 – 4 card presses
1 " "	1 – 3 machines
1 " "	1 – lathe
1 " "	1 – 1 sewing machine
1 "	1 – 2 " "
1	1 – 1 " " 18
1 " 2 drilling "	1 – " "
1 2 "	1 – " "

How far do your vaults extend towards the edge of the side walk, –

Even with the curb

𝍸. 𝍸. 𝍸. 𝍸. | = 21

23 = ||| 𝍸. 𝍸. 𝍸 𝍸 𝍸

2 = || within 13 ft of curb

1 = | within 12 ft of curb

3 = |||| within 11 ft of curb

1 (1) within 4½ ft of curb

1 (1) " 4 " " "

𝍸 -(5) " 5 " " "

||| -(3) " 6 " " "

| -(1) 7 " " "

10 " " "

(18) 𝍸. 𝍸 𝍸 𝍸. ||| 8 " " "

(29) 𝍸. 𝍸 𝍸 𝍸 9

|| -(2) Beyond the curb

Have you good ventilation.

Fair	Yes	Poor
𝍸. 𝍸. 𝍸. 𝍸	𝍸. 𝍸. 𝍸.	𝍸. 𝍸. 𝍸
𝍸		𝍸. 𝍸. 𝍸. 𝍸	𝍸. 𝍸. 𝍸
	𝍸. 𝍸.	|
26	45	31

What time do yo close

In Winter	In summer
9 — 卌 — 4	10 — 卌 — 5
5 — |||| — 4	5 — |||| — 4
5-30 — 卌. 卌. 卌. 卌. ||| — 23	5.30 — 卌. 卌. 卌. 卌||| 23
6 — 卌. 卌. 卌. 卌. 卌 卌. 卌. 卌 卌. 卌. || — 52	6 — 卌. 卌. 卌. 卌. 卌. 卌 卌. 卌. 卌. 卌. || 52
7 — ||| — 3	12 — ||| — 3.
12 - ||| — 3	a.m 3 — | — 1
p.m 3 — | = 1	p.m 11 — ||| — 3
p.m 11 — ||| — 3	8 — 卌|| — 7
10 — |||| — 4	9 — |||| — 4
8 — 卌.|| — 7	7 — ||| — 3

all the time — 卌

|| close at 7 p.m open at midnight (restaurant)

Book 3

What Co: supplies you with gas?

N. Y.

𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸
𝍸 𝍸. 𝍸. 𝍸. 𝍸. ||

107

Kerosene

𝍸. 𝍸. 𝍸. 𝍸. 𝍸. ||

27

City Gas

𝍸. |||

8

Mutual.

𝍸. 𝍸. 𝍸. ||

17

Candles

𝍸. |||

8

Do not use any light.

𝍸. ||||

9

w From 2 a.m to 7 a.m = 8.3.1. = 12
w From 3 a.m to 7 a.m = 8.2.3.2,2.5. = 22
w From 4 a.m to 7 a.m = 4.3.3.3.3.4.2.1,4 = 30
w From 5 a.m to 7 a.m = 3.4.2.3.5.3.3.3.3.8.8.1.8. = 55
w From 6 a.m to 7 a.m = 12.2.2.56, = 72
S. From 5 a m to 7 a m = 3. = 3

From 4.45 P.M till daylight (7) a.m
56

What is the actual number of 3 jets burning from 8 a.m. to 5 P.M in summer.

𝍸.𝍸.𝍸.𝍸.𝍸.[illegible] 24 𝍸.𝍸 = 59

What number do you burn from 8. a.m. to 5 P.M. in winter.

𝍸.𝍸.𝍸:𝍸.𝍸:𝍸.𝍸:𝍸.𝍸.𝍸.𝍸:𝍸.𝍸.𝍸:𝍸:𝍸.𝍸.𝍸[illegible]
24.𝍸.𝍸.1 = 120

Refer also to opposite page
H—

over..

From 5 to 6 P.M. in Winter.

𝍸.𝍸.𝍸.26,30 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸
𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸. 117. 𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.𝍸.
.415, 125. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.𝍸. 𝍸.𝍸.𝍸.𝍸.𝍸.
30. 31. 39. 𝍸.𝍸.𝍸.𝍸: 𝍸. 𝍸. 𝍸.𝍸. 𝍸 𝍸. 𝍸. 𝍸. 𝍸
𝍸. 𝍸. 𝍸. 40. 𝍸 .𝍸.𝍸.| =

326
56
117
415
125
100
40
1179 Total.

From 5 to 6 P. M in Summer?

𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
|| = 77 Total.

How many gas jets have you without globes?

318
64
47
372
37
80
24
32
77
1051

𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 37. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸.
𝍸. 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. 64. 47. 372. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸 𝍸 𝍸
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 80. 24. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 ||| 24. 53.
32.

How many have clear glass globes?

𝍸. 104. 17. 𝍸. 𝍸. 𝍸.

104
17
20
141

How many have ground glass globes?

159
51
117
327

38. 13. 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 117. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. |||.

Tri Ohade. 20.8.3.2.1.- 34

— 3

Do you use gas for heating.

Yes	No
2 Heating 1 " office 1 " tea 1 " sealing wax 1 " coffee	𝍸, 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸. 𝍸. 𝍸. 𝍸 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸. 𝍸. 𝍸. 1 106

for argand light—
𝍸||

1 heating iron
1 gas stove tea
1 glue pot
1 oysters
1 by tanker
1 heating water

1 blowpipes
1 soldering

= 21

How many ½ lights, Many in groups of small jets are used, how many? How many in each group?

reflector
1
14 ref — 4 burs each
6 " — 6 " "

3

How far do your vaults Extend?

Even with the curb

|||| = 4

over the riv

within 12 ft - |||| = 4 + 2 = 6

within 9 ft - 𝍸.𝍸.𝍸.||| = 18

within 10 ft - || = 2

within 11 ft - 𝍸.|| = 7

~~within 12 ft - || = 2~~

within 8 𝍸.𝍸.|||| = 14

within 6 ft - || = 2

within 7 ft - | = 1

3

Have you good Ventilation

Yes	No
𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸 𝍸 𝍸. 𝍸. 𝍸. 𝍸 𝍸. 𝍸. 𝍸	𝍸. 𝍸. |||
95	13

Fair

𝍸. 𝍸. 𝍸 𝍸 |

21

3

What time do you close in Winter & Summer.

15 = 5.30 — 𝍸 𝍸 𝍸

59 = 6 — 𝍸 𝍸 𝍸 𝍸 [illegible] 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||||

8 = 6.30 — 𝍸 |||

27 = 7 — 𝍸 𝍸 𝍸 𝍸 𝍸 ||

4 = 9 — ||||

1 = 9.30 — |

1 = 12 — |

2 = 5 — 𝍸 𝍸 ||

4 = 3 — ||||

1 = 3.30 — |

2 = 4 — 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||

2 = 8 — ||

4 = 10 — ||||

= 11 — |

never close

|| = 2

all night —

| = 1

Book 5

From 8 A.M. to 5 P.M.
Summer.

2
2
2
1
1
5
1
1
1
3
13
2
1
1
1
4
1
1
1
5
2

4
35
1
1
3
2
1
1
1
2
1
1
1
1
1
4
1
1
1
1

2
1
1
1
1
2
2
2
127
13

76
61
127

Book 5

From 8 am to 5 P.M

Waiter

2
1
2
8
2
7
1
2
1
2
3
15
4
1
1
1
1
6
1
1

1
6
1
2
6
35
1
1
1
3
1
4
2
1
2
1
1
2
1
1
1
4

1
1
1
2
1
1
2
2
2
3
3

160

5

From 5 P.M to 6 P.M

~~Summer~~

4

Winter

25	5	3	4
10	12	0	2
6	7	13	10
10	20	8	6
7	5	8	6
5	4	15	12
14	20	4	6
6	4	9	26
12	6	6	1
8	7	12	6
26	7	2	6
10	20	14	6
8	3	3	10
4	2	8	6
20	35	8	6
3	1	4	4
30	1	4	6
12	8	2	20
6	1	8	4
12	10	8	15
30	20		12
			6
264	198	139.	180 = 781 Total

6

.7

264
198
139
180
781

Book 5

From 6 P.M. to 7 P.M.
Winter.

2
6
10
7
2
27
26
53
4
3
60
1
13
74
2
1
13
2
4
1
97
6
4
1
108
8
6
122
1
2
125

Book 3

From 7 P.M to 8 P.M

Miles.

2
4
3
9
2
10
21
3
1
8
8
2
1
8
8
60
2
1
1
8
6 7
1
2
70

Book 5

Mutual.

𝍸. 𝍸. 𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. ||||

44

New York

𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. 𝍸. |||
𝍸

54

Kerosene

𝍸. 𝍸. 𝍸. 𝍸 𝍸 𝍸 𝍸
~~𝍸~~ 𝍸. 𝍸 𝍸 𝍸 𝍸 𝍸.
𝍸 𝍸. |||. = 79 parties
5.2.1.3.2.4.4.3.1.2.1.2.25
2.2. 2.1.2. 1.1.1.1.1.1.1.1.
1.1.1.1.11.3.5.4.4.1.1 2.1
1.1. 2.1 1 1 1 1 1 1 1 1 1
6.2.2 2. 2.1. 2.4.3 4.6.4.
4.4. 4. 3. 6.31. 10.3.4.6
2.5. 6.7. 4. 12

= lamps

Dont use any light

𝍸. 5

Candles

1. = 1

All Night.

2.1.1.2.1.1.2.1.3.2.1.1.1.1. = 20

8 to 10 =

1 = 1

8 to 9

3.5 = 8

9 to 10

10.3 = 13

10 to 11

8
26
1
12
6
6
12
6
6
3
6
20
4
15
16
12
6

10

25 2

165

8

Body 8

Gas Jets without Globes

10	25	12	4	2	25	4	10	1	
20	7	12	20	8	23	30	12	24	Argand Burners
14	2	4	1	2	10	16	10	6	
6	8	6	20	4	3	6	2	6	𝍸. 𝍸. 𝍸.
14	1	6	20	2	9	25	4	1	𝍸. 𝍸. 𝍸 1
4	6	8	4	10	12	4	2	6	
3	30	12	24	2	1	26	2		
7		8		6		5	50	=849	81

With Clear Glas Globes

6.1.8. = 15

Tin Shades
𝍸. 𝍸.
10

With ground glass globes

16	1	7
12	6	6
2	4	
1	4	

59

opal globes

20	26	4
8	2	
1	8	
14	2	
	2	

= 87

8
26
1
12
6
6
12
6
6
3
6
20
4
15
16
12
6

10

252
165
8

Gas Jets without Globes

10	25	12	4	2	25	4	10	1
20	7	12	20	8	23	30	12	24
14	2	4	1	2	10	16	10	6
6	8	8	20	4	9	6	2	6
14	1	8	20	2	9	25	4	1
4	6	8	4	10	12	4	2	6
9	30	12	24	2	1	26	2	
7		8		6		3	50	

= 849

Argand Burners
𝍸. 𝍸. 𝍸.
𝍸. 𝍸. 𝍸. 1
31

With Clear Glas Globes

6. 1. 8. = 15

Tin Shades
𝍸. 𝍸.
10

With ground glass globes

16	1	7
12	6	6
2	4	
1	4	

59

opal globes

20	26	4
8	2	
1	8	
14	2	
	2	

= 87

Book 5

Bothered by Heat

Yes		No		
		2	1	to
5	3	2	1	
1	1	3	1	
1	1	2	5	
3	1	3	1	
2	2	3	2	
3		4	3	
1		1	1	
2		3	3	
1		1	1	
3		1	5	
2		3	3	
2		1	2	
			4	
34			63	

55.75
17.00
52.50
11.75
54.00
4.92
49.50
15.50
25.83

59) 286.75 (4.86
236 x x
507
472
355
354
1

28) 117.56 (4.19
112
55
28
276
252
14

Year
7.00
5.00
12.00

59

Book No 5.

For Jan, or Dec.

6.00
7.50
2.00
4.50
11.00
45.00
3.80
56.08
3.37
8.00
11.00
7.00

157.25
13.10
average for Jan or Dec.

June, or July.

1.58
.50
1.20
2.00
2.00
20.00
1.24
28.04
.20
.50
5.40
5.00

67.66

3.00
2.00
4.00
1.00
1.00
1.50
8.00
3.00
3.00
2.00
1.00
4.00
4.00
3.00
4.00
5.40

49.90
67.66
117.56
4.19
average of 28 bills for June or July

28 bills

59

per Month.

5.00
1.00
55.75
17.00
52.50
11.75

12.
.50
10.
[illegible]
4.00
18.
4.00
1.25
2.00
6.00
3.00
3.00
3.00
9.00
35.00
2.00
2.50
4.00
2.00
1.50
16.00
1.25
1.00
8.00
7.00
5.00
6.11
25.00
3.00
54.00

75
1
1
80
3
1.00
2.50
.50
6.00
1.50
20.00
5.00
2.00
15.00
2.00
2.50
3.00
1.00
3.00
2.00
2.00
15.50
23
5.00
15.00
1.50
.60
1.00
1.50
1.00
25.83

bills:
286.75
4.19
average for 59 bills
4.92

Dont Denver tell what they pay
2 N. P.

145
38 1/2

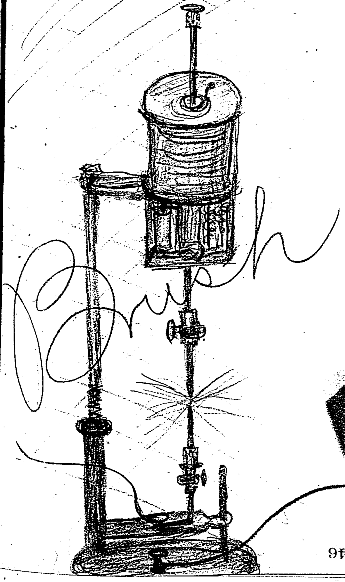
Book 4

2 Horse Power".
$5. per month.
7 Horse Power.
6 Horse Power.
7 " "
8 " "
40 " "
10 " "
15 " "
80 " " Renting Power
2 1/2 " "
1 " "
2 " "
5 " "
4 " "
2 " "
2 " "
10 " "
10 " "

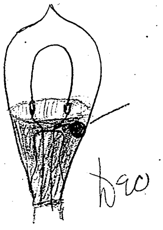
1 Horse Power
4 " "
2 " "
2 " "
4 " "
4 " "
2 " "
3 " "
1 " "
4 " "
2 " "
4 " "
10 " "
50 " "
2 " "
4 " "
40 " "

10 Horse Power

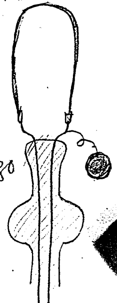
Edison Electric Light Co.
New York


Brush

Wm J. Hammer



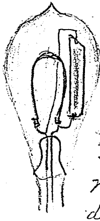
Dec 7-1880



Globe lined inside + coated outside with platinum foil the inside part having pith ball coated with platina on one wire which made contact with inside coating the other wire to be connected with outside coating

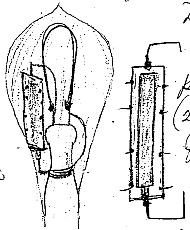
Made two & the plating on one twice the height of the other

Dec 1880



Condenser of tinfoil & mica several from 3 to 7 layers foil, fastened with shellac & gum tragicanth which volitilized & deposited on carbon changing resistance greatly

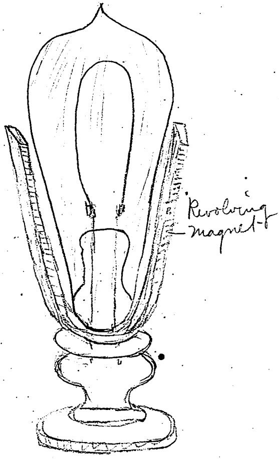
Dec 7-1880



Wm J. Hammer

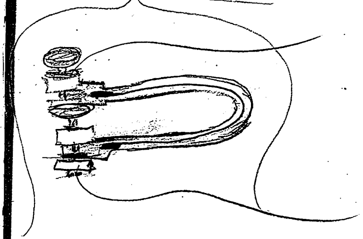
In this used platina foil (2-of 5 & 6 sheets) fastened the mica plates together with .005 platina wire setting condenser further down & getting firmer clamping

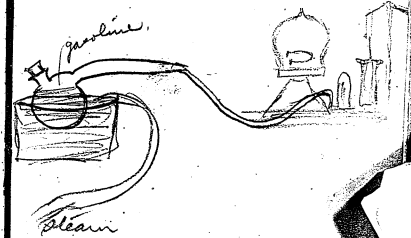
Nov 1878


Revolving magnet

By Wm J. Hammer

Dec 4-1880.

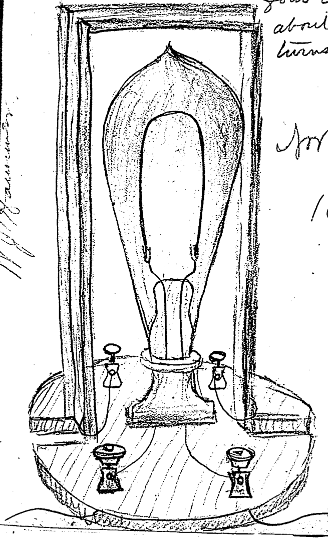



gasoline,
steam

W. J. Hammer.

Over

Coil of no 28 wire
four layers
about 150
turns,



Nov 25

1880

Wm J Hammer

170,684 / ~~91168.00/50~~
896070X
156100

229,020) 93,899.00 (4

170,680 / 91168.00 (5-3
853400X
582800
512040
70760

179,214 / 45,178.00 / 25
358428X
933520
896070

170,680
5
853400
170680
179214.00

~~179 [illegible]~~ / 93,899.00

179,214 / 91168.00 (5-6
896070X
1156100
1075284
80816

137,970.00
46,802.00
$ 91,168.00 Net Income

170,680.. / 91,168.00 / .53
85340.00
5828 00
51204 0
760

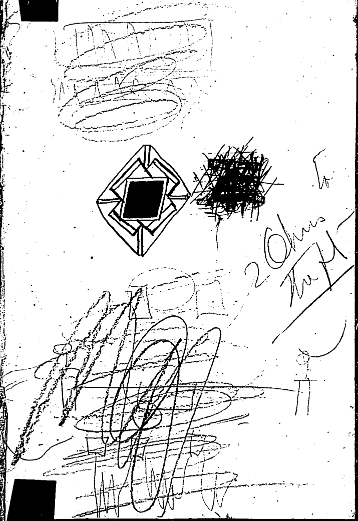
170,680.
.05
8534.00
170680
179214.00

7482.50
4000.00
8190.00
2190.50
7000.00
28863.00
7200.
$ 36071.00
10731.00
46,802.00

Nov 10 1880

47

[illegible] the Court



To

20hrs

Thu [illegible]